

## REMARKS

Claims 1-7, 9-110 remain in this application. Claims 1, 2 5, and 10 are amended. Claim 8 is canceled. No new matter is introduced.

The Specification is objected to and Claims 1-10 are rejected under 35 U.S.C. § 112, first and second paragraphs, for failing to provide an enabling disclosure and as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. Applicant is submitting, in a separate cover, a substitute Specification with a marked-up copy showing portions of the original Specification that have been added and/or deleted. No new matter is introduced.

Applicant is also submitting as attached herewith substituted drawings for Figs. 1 and 6. Figs. 1 and 6 are amended so that they are consistent with the Specification. No new matter is introduced.

Applicant respectfully submits that, in both the Specification and the Claims, the word "spin" has been amended to read – convolutional --, and the word " cross" has been amended to read – interleaving --. Applicant believes that these changes should remove the ambiguities that existed in the original Specification. As a result, Applicant believes that the Examiner's 35 U.S.C. § 112, first and second paragraph rejections should now be deemed moot.

Claims 1, 2, and 5 are rejected under 35 U.S.C. §102(b) as being anticipated by Acharya et al. Also, Claims 3 and 4 are rejected under 35 U.S.C. §103(a) as being unpatentable over Acharaye et al. in view of Schulz; Claim 10 is rejected under 35 U.S.C. §103(a) as being unpatentable over Acharaye et al. in view of Ramaswamy. Applicant would like to traverse the Examiner's rejection below by pointing out several important differences between the method of the present invention and those taught by the references cited by the Examiner.

In order to better illustrate some of the key elements of the present invention, Claim 1, as amended, is duplicated below:

Claim 1:

1. An information hiding method with reduced fuzziness, which comprises the steps of:  
inputting the information to be embedded into a convolutional encoder and  
generating encoded information whose length is a multiple of the original  
information;

generating a random number sequence using interleaving encoding for permuting  
the encoded information, the seed of the random numbers being a first key;

selecting a pixel of a host image using a random number generator as an  
information embedding point of the encoded information, the seed of the random  
number generator being a second key; and

embedding the encoded information into a B channel of the pixel of the host image.

Applicant respectfully submits that, as provided in the Specification as originally submitted the present invention discloses a method for hiding information using several communications and image processing techniques. In the method of the present invention, first, the B channel in the RGB color image is selected to hide information because human eyes are not sensitive to the B channel. The information is then embedded therein using interleaving encoding, channel encoding and pixel location correlation. With the encoding/decoding techniques and the comparison among neighboring pixels, the hidden information can be effectively protected from illegal modification. Also, because of the restoration ability of the channel encoding and the comparison among neighboring pixels, the present invention can correctly restore the information even after JPEG fuzziness compression.

Also as provided in the Specification, the method disclosed in the present invention can protect the information and withstand fuzziness damages. Using the channel encoding technique and the image correlations, a method of producing an electronic signature is provided by further

combining with some basic image hiding techniques. This invention has practical values in determining the locations of copyright labels and other information camouflage. Applicant believes that many of the key elements of the present invention are not taught in the Acharya et al. reference.

Applicant respectfully submits that it has been clearly established that "anticipation can only be established by a single prior art reference which discloses each and every element of the claimed invention". *Structural Rubber Prod. Co. v. Park Rubber Co.* 223 USPQ 1264 (Fed. Cir. 1984). It has been held by the Federal Circuit that in order "[f]or a prior-art reference to anticipate, every element of the claimed invention must be identically shown in a single reference" (emphasis added). *In re Bond*, 15 U.S.P.Q.2d 1566 (Fed. Cir. 1990). More recently the Federal Circuit reiterated that "a rejection for anticipation under section 102 requires that each and every limitation of the claimed invention be disclosed in a single prior art reference". *In re Paulsen*, 31 USPQ 2d 1671 (Fed. Cir. 1994).

Applicant respectfully submits that, as discussed above, several key elements of the present are not disclosed in the Acharya et al. reference. Thus, it cannot be said, as a matter of law, that the present invention is anticipated by the Acharya et al. reference. As a result, the Examiner's Section 102 anticipation rejection appears to be in error and must be withdrawn.

As discussed above, Claim 1, as amended, is now allowable. Claims 2-7 and 9-10, which depend from Claim 1, should now also become allowable. A dependent claim should be considered allowable when its parent claim is allowed. *In re McCarn*, 101 U.S.P.Q. 411 (CCPA 1954).

In light of the foregoing, it is believed that the present invention is in condition for allowance. And Applicant respectfully requests that a timely Notice of Allowance be issued in this case. If the Examiner has any question, he or she is invited to call or fax Applicant's counsel at the telephone numbers below.

Respectfully Submitted,

10/14/03

Date

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